

§Appl. No. 10/668,181
Amdt. dated February 28, 2006
Reply to Office Action of, November 29, 2005

Listing of Claims:

Please **amend** the claims as follows:

1. **(Previously Presented)** An isolated mammalian epididymis-specific receptor protein which has the amino acid sequence shown in SEQ ID NO: 2, or a derivative of said protein or a fragment of said protein, said derivative or fragment having at least one biological activity and/or immunogenicity of said protein, wherein said derivative or fragment comprises at least ten contiguous amino acids of SEQ ID NO: 2.
2. **(Previously Presented)** A protein of claim 1 wherein said derivative or fragment comprises a hydrophilic region of said receptor.
3. **(Previously Presented)** A protein of claim 2 wherein said derivative or fragment comprises an extracellular hydrophilic region of said receptor.
4. **(Previously Presented)** An isolated protein having a sequence selected from the group consisting of SEQ ID NOs: 2, 3, 4, 5, 6 and 7.
5. **(Previously Presented)** A protein of claim 1 wherein said derivative or fragment is comprises at least one sequence selected from the group consisting of any one of SEQ ID NO: 3-7.
6. **(Withdrawn)** An isolated DNA sequence which codes for the receptor protein or an active derivative or fragment thereof having the same biological activity and/or immunogenicity, according to claim 1.

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7. **(Withdrawn)** An isolated DNA sequence which codes for a protein of claim 3.
8. **(Withdrawn)** An isolated DNA sequence which codes for a protein of claim 4.
9. **(Withdrawn)** An isolated DNA sequence according to claim 6, chosen from a) the nucleotide sequence shown in SEQ ID NO: 1, b) the sequence of nucleotides 1 to 3,114 of SEQ ID NO: 1, c) a sequence homologous to the sequence represented by SEQ ID NO: 1 having a degree of homology of at least 70% and d) a syngenic or complementary sequence of a sequence according to a), b) or c), or a fragment thereof, where said sequence codes for a protein or polypeptide having the same biological activity and/or immunogenicity as said protein or active derivative or fragment.
10. **(Withdrawn)** A vector molecule, comprising at least one of the DNA sequence according to claim 2 as an insert, while maintaining the ability to replicate in a suitable host cell.
11. **(Withdrawn)** A vector molecule according to claim 10, wherein said DNA sequence is inserted in said vector, in a manner such that expression thereof can take place in a suitable host organism.
12. **(Withdrawn)** A prokaryotic or eukaryotic host cell transformed with a vector molecule according to claim 10.
13. **(Withdrawn)** A prokaryotic or eukaryotic host cell transformed with a vector molecule according to claim 11.

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14. (Withdrawn) A process for the preparation of an isolated mammalian epididymis-specific receptor protein, which has an amino acid shown in SEQ ID NO: 2 or a derivative or fragment thereof having at least one biological activity and/or immunogenicity of said protein, said process comprising culturing a host cell according to claim 12 in a culture batch under conditions which allow expression of the DNA sequence, and obtaining the expression product from the culture batch.

15. (Cancelled)

16. (Cancelled)

17. (Previously Presented) A pharmaceutical composition which comprises a protein, derivative or fragment according to claim 1 as an active component.

18. (Cancelled)

19. (Withdrawn) A pharmaceutical composition which comprises, as an active component, at least one nucleotide sequence which hybridizes with a nucleotide sequence according to claim 6.

20. (Withdrawn) A pharmaceutical composition according to claim 19, further comprising a detectable marker.

21. (Previously Presented) A composition comprising a protein according to claim 4.

- 22. (Original)** A pharmaceutical composition according to claim 17 for treatment of male reproduction disorders or for contraception.
- 23. (Withdrawn)** A method of isolating a ligand specific for an epididymis-specific receptor comprising incubating the epididymis-specific receptor protein of claim 1 with a substance suspected to be a ligand of said receptor and detecting binding of said receptor to said ligand.
- 24. (Withdrawn)** A method according to claim 23 wherein said ligand is an agonist of said epididymis-specific receptor.
- 25. (Withdrawn)** A method according claim 23 wherein said ligand is an antagonist of said epididymis-specific receptor.
- 26. (Withdrawn)** A method of treating infertility in a male mammal comprising administering an agonist of an epididymis-specific receptor protein of claim 1 to said male mammal.
- 27. (Withdrawn)** A contraceptive method for male mammals comprising administering an antagonist of an epididymis-specific receptor to said male mammal wherein said antagonist comprises a protein derivative or fragment of claim 1.
- 28. (Withdrawn)** A method of treating infertility in a male mammal comprising administering an agonist of an epididymis-specific receptor of claim 1 to said male mammal.
- 29. (Withdrawn)** A contraceptive method for male mammals comprising administering an antagonist of an epididymis-specific receptor of claim 1 to said male mammal.

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30. (Withdrawn) A method of diagnosing infertility in a male comprising measuring from said male to an epididymis-specific receptor protein of claim 1.

31. (New) A protein of claim 1, wherein said derivative is a protein having at least 90% sequence similarity to the sequence set forth in SEQ ID NO: 2.

32. (New) A protein of claim 1, wherein said derivative is coded for a DNA that hybridizes to the complete complement of SEQ ID NO:1 under hybridization conditions comprising hybridizing in 5x Denhardt's solution, 4x SET (200 mM Tris (pH 8.0), 20 mM EDTA, 0.6 M NaCl), 0.1% sodium pyrophosphate and 25 mM sodium phosphate buffer (pH 7.0) for 72 hours at 65°C then washed in 0.1% SDS, 2x SSC (300 mM sodium chloride, 30 mM sodium₃ citrate) at a temperature of 65°C.

33. (New) A protein of claim 1 which has the immunogenicity of said mammalian epididymis-specific receptor protein which has the amino acid sequence shown in SEQ ID NO: 2.